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| 23117 7590 12/08/2008<br>NIXON & VANDERHYE, PC<br>901 NORTH GLEBE ROAD, 11TH FLOOR<br>ARLINGTON, VA 22203 |             |                      |                     |                  |
| EXAMINER  |             |                      |                     |                  |
| CALANDRA, ANTHONY J   |             |                      |                     |                  |
| ART UNIT  |             | PAPER NUMBER         |                     |                  |
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/589,869

**Applicant(s)**

SLAGHEK ET AL.

**Examiner**

ANTHONY J. CALANDRA

**Art Unit**

1791

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☒ Claim(s) 14 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-8508)
- Paper No(s)/Mail Date 8/18/2006, 11/19/2006
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

***Detailed Office Action***

1. The communication dated 8/18/2006 has been entered and fully considered.
2. Claims 1-17 are currently pending.

***Information Disclosure Statement***

3. The information disclosure statement filed 8/16/2006 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed.
4. Therefore the two "Database WPI" NPL documents were not considered. The Japanese patent abstracts were downloaded online by the patent examiner for review, however the applicant should supply copies for the case file.

***Double Patenting***

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6. Claims 15-17 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 5, 7, and 10-14 of copending Application No.10/589868. Although the conflicting claims are not identical, they are not patentably distinct from each other because both applications claim creating paper and pulp products using animal fibers including those from pigs. Presently, instant claim 1 does not state how the keratin containing fibers are 'used' to make paper/pulp. Therefore the use of keratin hairs could be 'used' to make a hydrolysate and be added to the wet end of paper machine, as such the paper products of the instant claim and copending claims would be obvious over each other.

The applicant should specifically state how the keratin containing fibers are 'used' to make pulp/paper. In the instant case the fibers are used by mixing the keratin containing fibers with cellulose fibers to make a pulp comprising cellulose and keratin.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

7. Claims 1-14 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 2, 4, 5, and 8-11 of copending Application No.11/628,715. Although the conflicting claims are not identical, they are not patentably distinct from each other because the copending and instant application both disclose a method for treating animal fibers which are not patentably distinct from each other. The use of the bleached fibers of the instant claimed invention is an intended use and therefore has not been given patentable weight. Further a mixture of cellulose with fibers is a composite material.

Instant claims 1-3 and 14 see copending claims 1, 2, and 11.

Instant claim 4 and 5, the copending application claims a bleaching/oxidizing agent.

Peroxide is a common and well-known bleaching agent.

Instant claims 6 and 7 see copending claims 4 and 5.

Instant claims 12 and 13 see copending claims 8-10.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

#### ***Claim Objections***

8. Claim 14 is objected to because of the following informalities: States dependency on its self. Should be dependent on claim 1. Appropriate correction is required.
9. Claim 14 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim, or amend the claim to place the claim in proper dependent form, or rewrite the claim in independent form. Hairs are fibers so it is unclear how claim 14 actually limits the parent claim.

#### ***Claim Rejections - 35 USC § 101***

10. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

#### ***Claim Rejections - 35 USC § 112***

11. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

12. Claims 1-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 provides for the use of “a particulate material prepared by means of a process”, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claim 1 is rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

Claims 2-17 are dependent on claim 1 and are similarly rejected.

Applicant should amend the claim to actively recite how the particulate animal hair material is being used in the process. Without actively reciting how the particulate keratin containing material is used, it could be used in a multitude of ways, for instance mixing with the cellulose pulp, in a coating formulation, or further processed to make an additive. Therefore, for purpose of examination examiner has interpreted the use of the particulate material as “mixing said particulate material with a cellulose pulp to form a mixed pulp comprising keratin and cellulose”.

In claim 15, applicant claims a ‘paper’ product. In claim 16, applicant claims a ‘paperboard’ product. Applicant does not give any structure to the products such that the

examiner can determine the proper metes and bound of the claims. Applicant also does not disclose the properties necessary to distinguish a 'paper' from a 'paperboard'.

***Claim Rejections - 35 USC § 103***

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

15. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

16. Claims 1, 4-7, 11-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 1,331,609 ANDERS, hereinafter ANDERS, in view of Japanese Publication JP 3174041A AKITARO et al., hereinafter AKITARO, or in the alternate, AKITARO in view of ANDERS.

Examiner shall refer to the patent abstract of the Japanese Publication from esp@cenet.

As for claim 1, ANDERS discloses a process for bleaching animal hair to a uniform shade [column 1 lines 9-15].

ANDERS discloses that cow and pig hair can be treating hair in an oxidizing solution which comprises hydrogen peroxide (*subjecting mammalian hair to an oxidation treatment in which the hair is contacted with a solution, which comprises a bleaching agent* [lines 75-80]).

ANDERS discloses that the hair is then washed in a bath comprising acetic acid or soap, thereby the hair is separated from the oxidizing solution (*separating the oxidized hair from the solution* [lines 80-86]).

It is the examiners positions that once the hair is removed from the washing solution it will begin to dry. Drying is an obvious process occurs when an object is removed from a water source and left in air. Additionally, ANDERS discloses that the hair may then treated with formaldehyde. Formaldehyde is a volatile substance and therefore acts to dry the hair (*drying the separated hair* [pg. 2 lines 1-5])

ANDERS does not disclose a use for the animal fibers after they have been bleached. AKITARO discloses that animal fibers can be cut to 3-10 mm in length which overlaps with the instant claimed range (*subjecting the dried hair to a treatment in which the hair is formed into a particulate material having an average particle size in the range of from 0.5 to*



4 mm [abstract]). The animal hair fibers are subsequently added to cellulose pulp and then formed into paper.

At the time of the invention it would be obvious to a person of ordinary skill in the art to use the bleached animal fibers of ANDERS in the paper product making process of AKITARO. It is *prima facie* obvious to apply a known technique to a known product ready for improvement to yield predictable results. In the instant case it would have been obvious to improve a known product such as bleached animal fibers by incorporating them into a value added product such as paper. A person of ordinary skill in the art would expect the animal fibers to work in the process of AKITARO whether they were bleached or not bleached.

In the alternative, it would have been obvious to bleach the animal fibers used in the paper of AKITARO by the process of ANDERS. A person of ordinary skill in the art would be motivated to do so to have fibers which are whiter and have a higher brightness. Whiteness and brightness are both desirable properties of paper. It is *prima facie* obvious to use known techniques to improve similar products in the same way. In the instant case animal fibers would be improved by bleaching them. A person of ordinary skill in the art would expect the fibers of AKITARO to be bleached.

As for claims 4 and 5, ANDERS discloses hydrogen peroxide, perborates, and percarbonates [lines 97-107].

As for claims 6 and 7, ANDERS discloses that the hydrogen peroxide treatment takes place in an alkaline solution, which is a pH greater than 7, which overlaps with the instant claimed ranges [claim 1]. ANDERS does not disclose the exact pH of the solution, however

ANDERS does disclose the use of ammonia to increase the alkalinity. At the time of the invention it would have been *prima facie* obvious to optimize the pH of the treatment solution through routine experimentation. ANDERS describes that alkalinity should be adjusted [lines 79-80] and therefore alkalinity is a result effective variable [see e.g. MPEP 2144.05 (II) (B) Optimization of ranges and result effective variables].

As for claim 11, ANDERS discloses that the hair can first be washed prior to treatment [lines 57-60].

As for claims 12 and 13, ANDERS discloses both pigs and cows [lines 11 and 12].

As for claim 14, hairs are fibers and therefore the particulate matter of hairs also comprises fibers. Additionally once mixed with cellulose pulp said cellulose are also fibers.

As for claims 15-17, the combination of ANDERS and AKITARO forms a pulp product and a paper product that is substantially the same as the instant claim or would be a obvious variant thereof. Paperboard is well known in the art as a thicker paper sheet, at the time of the invention it would have been obvious to a person of ordinary skill in the art to optimize paper thickness to obtain a paperboard.

17. Claims 2, 3, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 1,331,609 ANDERS, hereinafter ANDERS, in view of Japanese Publication JP 3174041A AKITARO et al., hereinafter AKITARO, or in the alternate, AKITARO in view of ANDERS, as applied to claim 1 above, and further in view of Handbook for Pulp and Paper Technologists by SMOOK, hereinafter SMOOK.

As for claim 10, AKITARO discloses that the animal fibers should be 3-10 mm in length and that said fibers are mixed with cellulose. SMOOK discloses that prior to papermaking pulp can be subjected to refining which alters the fibers and always shortens them to a certain extent [pg. 197 column 2]. At the time of the invention it would have been *prima facie* obvious to refine the animal and cellulose fibers prior to paper making. A person of ordinary skill in the art would be motivated to do so to obtain optimum strength development and control stock freeness [pg. 205 column 1].

As for claims 2 and 3, AKITARO discloses that the fibers can be 3-10 mm in length. The endpoint of 3 mm of the range is the same endpoint of instant claim 2. As for instant claim 3, the prior art range is exclusive but close to the instant claim range. It is the examiners position that the refining process of SMOOK will further serve to cut the fibers and cause said fibers to have lengths less than 3mm. In the alternative, the claimed ranges are close enough that one skilled in the art would have expected them to have the same properties and therefore a *prima facie* case of obviousness would exist absent evidence of unexpected results.

18. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 1,331,609 ANDERS, hereinafter ANDERS, in view of Japanese Publication JP 3174041A AKITARO et al., hereinafter AKITARO, or in the alternate, AKITARO in view of ANDERS, as applied to claim 1 above, and further in view of U.S. Patent 1,937,710 MULLER, hereinafter MULLER.

ANDERS discloses a bleaching process using alkaline peroxide. As the solution is alkaline it does not have a pH from 3 to 7. MULLER discloses a process for bleaching animal

fibers. MULLER states that by making the process slightly acidic instead of alkaline the fiber quality is improved [pg. 1 lines 60-81]. At the time of the invention it would have been *prima facie* obvious to use the acidic conditions of MULLER instead of the alkaline conditions of ANDERS. A person of ordinary skill in the art would be motivated to do so, by MULLER, as to improve fiber quality and decrease the amount of peroxide used [pg. 1 lines 90-109]. Examiner has interpreted the term 'weakly acidic' as being a range which overlaps with a pH of the instant claim from 4-6. In the alternate it is *prima facie* obvious to optimize a result effective variable such as pH [see e.g. MPEP 2144.05 (II) (B) Optimization of ranges and result effective variables].

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANTHONY J. CALANDRA whose telephone number is (571) 270-5124. The examiner can normally be reached on Monday through Thursday, 7:30 AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on (571) 272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/AJC/

/Eric Hug/  
Primary Examiner, Art Unit 1791